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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,513	12/02/2004	Masashi Watanabe	260942US2PCT	6964

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EXAMINER

NEGRON, ISMAEL

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/516,513

Applicant(s)

WATANABE, MASASHI

Examiner

Ismael Negron

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-12, 14-16, 18-20 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 13, 17 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/2/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's preliminary amendment filed on December 2, 2004 has been entered. No claim has been amended. Claims 1-9 have been cancelled. Claims 10-24 have been added. Claims 10-24 are still pending in this application, with claims 10 and 22 being independent.

Title

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: **Generator-Powered** Bicycle Headlamp and Headlamp Electrical Circuit.

Abstract

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology

often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

4. The Examiner respectfully suggests amending the abstract as follows:

A bicycle headlamp ~~1~~includes **including** a rotor ~~3~~including **having** a plurality of magnet plates ~~33~~ attached to spokes ~~91~~ of a wheel of a bicycle ~~9~~ along the circumference of the wheel, each magnet plate having the form of an arc of a certain circle and including a plurality of magnets ~~34~~ disposed at regular circumferential spacings with alternating south and north poles; a stator ~~5~~ including a power-generating coil ~~53~~ including a coil and an iron core disposed in a fixed position to face the magnetic pole faces of the magnet plates ~~33~~ of the rotor ~~3~~; a. **A** case containing at least a headlamp electrical circuit ~~74~~ for establishing resonance at a frequency synchronized with a certain relative speed of the magnets by means of the power-generating coil ~~53~~ of the stator ~~5~~ and a capacitor connected in

series with the power-generating coil 53, and for rectifying, smoothing out, and outputting electric power obtained from the power-generating coil 53, a . **Also included are a** light-emitting diode 73 which is lit by the electric power supplied from the headlamp electric circuit 71, and a condenser lens 75 for focusing light emitted from the light-emitting diode in front of the bicycle and for illuminating the roadway.

Drawings

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "77" has been used to designate different parts in different embodiments. See Figures 1, 9 and 11. In addition, note reference character "77" as used in Figures 1, 9 and 11.

The applicant is advised that the reference characters must be properly applied, with no single reference character being used for two different parts or for a given part and a modification of such part. See MPEP §608.01(g).

6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not

accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

7. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The use of “and/or” language renders the claim indefinite, as it is not clear if the recited light sensor and manual switch are both required elements of the claimed invention, or merely mutually excluding alternatives.

8. The applicant is advised that in the comparing the claimed invention with the Prior Art, the Examiner assumed that the limitations presented by Claim 24 further defined the previously recited electrical circuit as featuring both a light sensor and a manual switch.

9. If the Examiner’s assumption is correct, it is respectfully suggested that Claim 24 be amended as follows:

A headlamp electrical circuit according to claim 22, wherein a light sensor ~~and/or~~ **and** a manual switch is connected to the constant-current circuit; **and wherein** the constant-current circuit is configured to allow or interrupt current supply to the light-emitting diode in accordance with a

~~sense signal from the light sensor, is configured to allow or interrupt current supply to the light-emitting diode in accordance with an on/off signal from the manual switch, or is configured to allow or interrupt current supply to the light-emitting diode in accordance with either or both of a signal from the light sensor and a signal from the manual switch.~~

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 10-12, 14-16, 18-20, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over JUNG (U.S. Pat. 5,590,946) in view of LAHOS (U.S. Pat. 5,584,561).

11. JUNG discloses a bicycle headlamp assembly having:

- **a rotor (as recited in Claim 10), Figure 3, reference number 30;**
- **the rotor including a plurality of magnet plates (as recited in Claim 10), Figure 3, reference number 30;**

Art Unit: 2875

- **the magnet plates being attached to spokes of a bicycle wheel along the circumference of the wheel (as recited in Claim 10), column 2, lines 8-10;**
- **each magnet plate having a form of an arc of a certain circle (as recited in Claim 10), as seen in Figure 3;**
- **each magnet plate including a plurality of magnets (as recited in Claim 10), column 2, lines 13-18;**
- **the magnets being disposed at regular circumferential spacing with alternating south and north poles (as recited in Claim 10), as evidenced by column 2, lines 28-31;**
- **a stator (as recited in Claim 10), Figure 3, reference number 20;**
- **the stator including a power-generating coil including a coil (as recited in claims 10 and 22), Figure 3, reference number 22;**
- **the power generating coil including an iron core (as recited in Claim 10), Figure 3, reference number 21;**
- **the iron core being disposed in a fixed position to face the magnetic pole faces of the magnet plates of the rotor (as recited in Claim 10), column 2, lines 26-31;**
- **a case (as recited in Claim 10), Figure 1, reference number 14;**
- **the case being separated from the stator, or containing a part of the stator (as recited in Claim 10), as seen in Figure 1;**

Art Unit: 2875

- **the case containing at least a headlamp electrical circuit (as recited in Claim 10), column 2, lines 10-13;**
- **a DC power circuit (as recited in claims 10 and 22), Figure 4, reference number 50;**
- **the power circuit being for rectifying, smoothing, and outputting electric power obtained from the power-generating coil (as recited in claims 10 and 22), column 2, lines 32-44;**
- **a light source (as recited in Claim 10), Figure 1, reference number 11;**
- **the light source being lit by the electric power supplied from the headlamp electrical circuit (as recited in Claim 10), as seen in Figure 4;**
- **the magnet plates being attached in a continuous ring shape or in separate positions (as recited in Claim 11), as seen in Figure 3; and**
- **the stator, comprising the power-generating coil, being separately disposed outside the case (as recited in claims 18-20), as seen in Figure 1.**

12. JUNG discloses all the limitations of the claims, except:

- **the circuit including a resonance circuit (as recited in claims 10 and 22);**

Art Unit: 2875

- the resonance circuit being formed of the power-generating coil of the stator and a capacitor connected in series with the-power-generating coil (as recited in claims 10 and 22);
- the resonance circuit being for establishing resonance at a frequency synchronized with a certain relative speed of the magnets (as recited in claims 10 and 22);
- the power circuit being for rectifying, smoothing, and outputting electric power obtained from the power-generating coil of the resonance circuit (as recited in claims 10 and 22);
- a light-emitting diode (as recited in Claim 10);
- the light emitting diode (LED) being lit by the electric power supplied from the headlamp electrical circuit (as recited in Claim 10);
- a condenser lens (as recited in Claim 10);
- the lens being for focusing light emitted from the light-emitting diode in front of the bicycle and for illuminating the roadway (as recited in Claim 10);
- the LED being a white light-emitting diode (as recited in Claim 12);
- the white LED having a luminous intensity of 2 cd or higher (as recited in Claim 12);

Art Unit: 2875

- the power-generating coil, the headlamp electrical circuit, the light-emitting diode, and the condenser lens being contained in the case as a unit (as recited in claims 14-16);
- the headlamp electrical circuit, the light-emitting diode, and the condenser lens being contained in the case (as recited in claims 18-20); and
- a constant-current circuit comprising at least two transistors, two resistors, and a capacitor, for receiving a direct current from the dc-dc converter and supplying a constant current to the light-emitting diode (as recited in Claim 23).

13. LAHOS discloses a bicycle headlamp assembly having:

- **a rotor (as recited in Claim 10), Figure 1, reference number 16;**
- **the rotor including a plurality of magnet (as recited in Claim 10), Figure 3, reference number 20;**
- **the magnet plates being attached to spokes of a bicycle wheel along the circumference of the wheel (as recited in Claim 10), column 2, lines 61-64;**
- **the magnets being disposed at regular circumferential spacing with alternating south and north poles (as recited in Claim 10), as evidenced by column 3, lines 12-16;**
- **a stator (as recited in Claim 10), Figure 1, reference number 18;**

Art Unit: 2875

- the stator including a power-generating coil including a coil (as recited in Claim 10), Figure 2, reference number 32;
- the power generating coil including an iron core (as recited in Claim 10), Figure 3, reference number 34;
- the iron core being disposed in a fixed position to face the magnetic pole faces of the magnet plates of the rotor (as recited in Claim 10), column 3, lines 12-16;
- a case (as recited in Claim 10), Figure 4, reference number 118;
- the case being separated from the stator, or containing a part of the stator (as recited in Claim 10), as seen in Figure 5;
- the case containing at least a headlamp electrical circuit (as recited in Claim 10), as seen in Figure 5;
- the circuit including a resonance circuit (as recited in Claim 10), as seen in Figure 7;
- the resonance circuit being formed of the power-generating coil of the stator and a capacitor connected in series with the power-generating coil (as recited in Claim 10), as seen in Figure 7;
- the resonance circuit being for establishing resonance at a frequency synchronized with a certain relative speed of the magnets (as recited in Claim 10), inherent;

- **a DC power circuit (as recited in Claim 10), Figure 6, reference number 200;**
- **the power circuit being for rectifying, smoothing, and outputting electric power obtained from the power-generating coil of the resonance circuit (as recited in Claim 10), column 3, lines 51-56;**
- **a light-emitting diode (as recited in Claim 10), Figure 4, reference numbers 136, 140 and 142;**
- **the light emitting diode (LED) being lit by the electric power supplied from the headlamp electrical circuit (as recited in Claim 10), column 3, lines 51-56;**
- **a condenser lens (as recited in Claim 10), as seen in Figure 4;**
- **the lens being for focusing light emitted from the light-emitting diode in front of the bicycle and for illuminating the roadway (as recited in Claim 10), inherent;**
- **the power-generating coil, the headlamp electrical circuit, the light-emitting diode, and the condenser lens being contained in the case as a unit (as recited in claims 14-16), as seen in Figure 5; and**
- **the headlamp electrical circuit, the light-emitting diode, and the condenser lens being contained in the case (as recited in claims 18-20), as seen in Figure 5; and**

- **a constant-current circuit for receiving a direct current from the dc-dc converter and supplying a constant current to the light-emitting diode (as recited in Claim 23), as evidenced by column 4, lines 5-17.**

14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the LED light source and circuit of LAHOS in the patented structure of JUNG to increase the efficiency and light output of such device. In addition, the examiner takes Official Notice that the use of LEDs is old and well known in the illumination art. One would have been motivated since LEDs are recognized in the illumination art to have many desirable advantages, including reduced size, high efficiency, low power consumption, long life, resistance to vibrations, and low heat production, over other light sources.

15. Regarding using white light-emitting diode having a luminous intensity of 2 cd or higher (as recited in Claim 12), it would have been obvious to one of ordinary skill in the art at the time the invention was made to use such white LED since using white light source is the art recognized standard for bicycle illumination devices. In addition, selecting a specific one of the Prior Art LED would have flown naturally to one of ordinary skill in the art at the time the invention was made as necessitated by the specific requirements of a particular application.

16. Regarding the constant-current circuit comprising at least two transistors, two resistors, and a capacitor (as recited in Claim 23), it would have been obvious to one of

Art Unit: 2875

ordinary skill in the art to include the claimed specific number of circuit elements in the circuit of JUNG and LAHOS, as necessitated by the specific circuit requirements of a particular application.

In addition, it is noted that the instant disclosure is silent as to the non-obvious advantages of using, specifically, at least two transistors, two resistors, and a capacitor. The claimed specific number of circuit elements appears to be an obvious matter of design choice.

17. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over JUNG (U.S. Pat. 5,590,946) in view of LAHOS (U.S. Pat. 5,584,561) as applied to claim 22 above, and further in view of SZANISZLO (U.S. Pat. 5,803,574).

18. JUNG and LAHOS disclose individually, or suggest when combined, all the limitations of the claims (as detailed in previous sections), except:

- a light sensor (as recited in Claim 24);
- a manual switch (as recited in Claim 24);
- the sensor and the switch being connected to the constant-current circuit (as recited in Claim 24); and
- the constant-current circuit being configured to allow or interrupt current supply to the light-emitting diode in accordance with a signal from the light sensor, the manual switch, or both (as recited in Claim 24).

19. SZANISZLO discloses a bicycle illumination assembly having:

- **a light emitting diode (as recited in Claim 1), Figure 2, reference number 23;**
- **a power source (as recited in Claim 1), Figure 2, reference number 31;**
- **an electrical circuit (as recited in Claim 1), Figure 2, reference number 5;**
- **a light sensor (as recited in Claim 24), Figure 2, reference number 25;**
- **a manual switch (as recited in Claim 24), Figure 2, reference number 29;**
- **the sensor and the switch being connected to the electrical circuit (as recited in Claim 24), as seen in Figure 2; and**
- **the electrical circuit being configured to allow or interrupt current supply to the light-emitting diode in accordance with a signal from the light sensor, the manual switch, or both (as recited in Claim 24), column 3, lines 37-50.**

20. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include the light control means of SZANISZLO in the bicycle headlamp assembly of JUNG and LAHOS to enable the light source of such device to be turned on only when necessary (e.g. when ambient light conditions are poor), as per the teachings of SZANISZLO.

Relevant Prior Art

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Carmichael et al. (U.S. Pat. 3,751,710), **Hirt et al.** (U.S. Pat. 3,971,977), **Kumakura** (U.S. Pat. 4,227,105), **Thomas et al.** (U.S. Pat. 4,796,972), **Copeland** (U.S. Pat. 5,015,918) and **Dai** (U.S. Pat. 6,565,242) disclose generator powered illumination devices including a rotor having a plurality of magnets and a stator assembly having a coil and at least one light source.

Sjobom (U.S. Pat. 5,515,253 and 5,896,093) disclose LED illumination assemblies including a plurality of LED and corresponding plurality of condenser lens for focusing light emitted by the LED.

Wilhem (U.S. Pat. 5,003,288) and **Caswell** (U.S. Pat. 6,170,968) disclose vehicle illumination devices having light sensing means for activating a light source when the ambient light levels are below a predetermined threshold.

Allowable Subject Matter

22. Claims 13, 17 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

23. The following is an examiner's statement of reasons for allowance:

Applicant teaches generator-powered bicycle headlamp including a rotor having a plurality of magnets plates each including a plurality of magnets, a stator assembly having a coil and a headlamp electrical circuit, and at plurality of light emitting diodes. The magnet plates are attached to the spokes of a bicycle wheel along the circumference of such wheel. The headlamp electrical circuit includes a resonance circuit with a capacitor in series with the coil, and a DC power circuit for rectifying and smoothing electric power obtained from the coil and supplying the electric power to the light-emitting diodes. A dome-shaped lens is provided for each of the light-emitting diodes, such lenses having a curvature, a diameter, and a thickness calculated to obtain a specified level of illumination in a specified circle at a specified distance by focusing light. A reflector is provided on a flat-plate portion above the lens, by applying a treatment for producing diffused reflection, so that approaching of the bicycle can be noticed ahead of the bicycle.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically a dome-shaped lens and a reflector provided on a flat-plate portion above the lens, in combination with the claimed generator-powered bicycle headlamp.


24. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached on (571) 272-2378. The facsimile machine number for the Art Group is (571) 273-8300.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications maybe obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.


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